

REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed January 11, 2005. Through this response, dependent claims 17 and 18 are added, and claim 1 has been amended. Reconsideration and allowance of the application and pending claims 1-18 are respectfully requested.

I. Allowable Subject Matter

Applicants appreciate the Examiner's indication that claim 7 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. In that it is believed that every rejection has been overcome, it is submitted that each of the claims that remains in the case is presently in condition for allowance.

II. Drawing Amendments

Applicants have amended FIG. 2A to correct a typographical error. In particular, the reference number 203 is in error, particularly since 203 already exists as a reference number corresponding to a clamped region. Applicants have amended FIG. 2A to delete reference number 203 corresponding to the drive electrode 206. A clean copy of FIG 2A and a marked-up copy of FIG. 2A that shows the change in red ink have been included with this response. It is respectfully asserted that no new matter has been added.

III. Claim Rejections - 35 U.S.C. § 102(b) (*Nguyen*, USPN 5,839,062)

A. Statement of the Rejection

Claims 1, 2, 5, 6, 8, 9, 12 and 13 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by *Nguyen et al.* ("*Nguyen*," U.S. Pat. No. 5,839,062). Applicants respectfully traverse this rejection.

B. Discussion of the Rejection

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(b).

In the present case, not every feature of the claimed invention is represented in the *Nguyen* reference.

Independent Claim 1

As recited in independent claim 1, Applicants claim (with emphasis added):

1. A method for synthesizing filters, comprising:
providing a first microelectromechanical system (MEMS) resonator and a second MEMS resonator adjacent to the first MEMS resonator; and
electrically coupling the first MEMS resonator to the second MEMS resonator.

Applicants respectfully submit that *Nguyen* does not disclose the emphasized claim features. The Office Action provides the following statement on page 3 of the Office Action:

Nguyen et al. shows a filter arrangement...comprising providing a first MEMS resonator (100) and a second MEM resonator (102) adjacent to the first MEMS resonator (Fig. 8A); and electrically coupling the first and second MEMS resonator (via spring coupler 104).

Applicants agree that the coupling of the two resonators in *Nguyen* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as “*electrically coupling the first MEMS resonator to the second MEMS resonator*,” as recited in independent claim 1. In that *Nguyen* clearly does not show electrically coupling resonators to one another, Applicants respectfully request that the rejection to independent claim 1 be withdrawn.

Because independent claim 1 is allowable over *Nguyen*, dependent claims 2-7 and 17 are allowable as a matter of law for at least the reason that the dependent claims 2-7 and 17 contain all elements of their respective base claim. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Independent Claim 8

As recited in independent claim 8, Applicants claim (with emphasis added):

8. A microelectromechanical system (MEMS) filter system, comprising:
a first MEMS resonator; and
a second MEMS resonator electrically coupled to the first MEMS resonator.

Applicants respectfully submit that *Nguyen* does not disclose the emphasized claim features. Applicants agree with the statement in the Office Action that the coupling of the two resonators in *Nguyen* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as “*a second MEMS resonator electrically coupled to the first MEMS resonator*,” as recited in independent claim 8. In

that *Nguyen* clearly does not show the explicit claim features, Applicants respectfully request that the rejection to independent claim 8 be withdrawn.

Because independent claim 8 is allowable over *Nguyen*, dependent claims 9-13 and 18 are allowable as a matter of law.

IV. Claim Rejections - 35 U.S.C. § 102(b) (*Nguyen*, USPN 5,424,074)

A. Statement of the Rejection

Claims 1, 2, 4, 8, 9, 11 and 14-16 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by *Nguyen et al.* ("*Nguyen*," U.S. Pat. No. 6,424,074). Applicants respectfully traverse this rejection.

B. Discussion of the Rejection

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(b).

In the present case, not every feature of the claimed invention is represented in the *Nguyen* reference.

Independent Claim 1

Applicants respectfully submit that *Nguyen* does not disclose "*electrically coupling the first MEMS resonator to the second MEMS resonator*," as recited in independent

claim 1. The Office Action provides the following statement on page 4 of the Office Action:

Nguyen et al. shows a filter arrangement...comprising providing a first MEMS resonator (18, resonator 1) and a second MEM resonator (18, resonator 2) adjacent to the first MEMS resonator (Fig. 5A); and electrically coupling the first and second MEMS resonator (via spring coupler 19).

Applicants agree that the coupling of the two resonators in *Nguyen* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as “*electrically coupling the first MEMS resonator to the second MEMS resonator*,” as recited in independent claim 1. In that *Nguyen* clearly does not show electrically coupling resonators to one another, Applicants respectfully request that the rejection to independent claim 1 be withdrawn.

Because independent claim 1 is allowable over *Nguyen*, dependent claims 2-7 and 17 are allowable as a matter of law.

Independent Claim 8

Applicants respectfully submit that *Nguyen* does not disclose “*a second MEMS resonator electrically coupled to the first MEMS resonator*,” as recited in independent claim 8. Applicants agree with the statement in the Office Action that the coupling of the two resonators in *Nguyen* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as “*a second MEMS resonator electrically coupled to the first MEMS resonator*,” as recited in independent claim 8. In that *Nguyen* clearly does not show the explicit claim features, Applicants respectfully request that the rejection to independent claim 8 be withdrawn.

Because independent claim 8 is allowable over *Nguyen*, dependent claims 9-13 and 18 are allowable as a matter of law.

Independent Claim 14

As recited in independent claim 14, Applicants claim (with emphasis added):

14. A communications device, comprising:
a receiver; and
a microelectromechanical system (MEMS) filter system disposed
in the receiver,
the MEMS filter system comprising:
a first MEMS resonator; and
***a second MEMS resonator electrically coupled to the first
MEMS resonator.***

Applicants respectfully submit that *Nguyen* does not disclose the emphasized claim features. Applicants agree with the statement in the Office Action that the coupling of the two resonators in *Nguyen* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as “***a second MEMS resonator electrically coupled to the first MEMS resonator,***” as recited in independent claim 14. In that *Nguyen* clearly does not show the explicit claim features, Applicants respectfully request that the rejection to independent claim 14 be withdrawn.

Because independent claim 14 is allowable over *Nguyen*, dependent claims 15-16 are allowable as a matter of law.

V. Claim Rejections - 35 U.S.C. § 102(e) (Zurn, USPN 6,621,134)

A. Statement of the Rejection

Claims 1, 2, 4, 8, 9, 11 and 14 have been rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by *Zurn* ("Zurn," U.S. Pat. No. 6,621,134). Applicants respectfully traverse this rejection.

B. Discussion of the Rejection

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(e).

In the present case, not every feature of the claimed invention is represented in the *Zurn* reference.

Independent Claim 1

Applicants respectfully submit that *Zurn* does not disclose "*electrically coupling the first MEMS resonator to the second MEMS resonator*," as recited in independent claim 1.

The Office Action provides the following statement on page 6 of the Office Action:

Zurn shows a filter arrangement...comprising providing a first MEMS resonator (252) and a second MEM resonator (258) adjacent to the first MEMS resonator (Fig. 14); and electrically coupling the first and second MEMS resonator (via spring coupler 256).

Applicants agree that the coupling of the two resonators in *Zurn* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as

“electrically coupling the first MEMS resonator to the second MEMS resonator,” as recited in independent claim 1. In that *Zurn* clearly does not show electrically coupling resonators to one another, Applicants respectfully request that the rejection to independent claim 1 be withdrawn.

Because independent claim 1 is allowable over *Zurn*, dependent claims 2-7 and 17 are allowable as a matter of law.

Independent Claim 8

Applicants respectfully submit that *Zurn* does not disclose *“a second MEMS resonator electrically coupled to the first MEMS resonator,”* as recited in independent claim 8. Applicants agree with the statement in the Office Action that the coupling of the two resonators in *Zurn* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as *“a second MEMS resonator electrically coupled to the first MEMS resonator,”* as recited in independent claim 8. In that *Zurn* clearly does not show the explicit claim features, Applicants respectfully request that the rejection to independent claim 8 be withdrawn.

Because independent claim 8 is allowable over *Zurn*, dependent claims 9-13 and 18 are allowable as a matter of law.

Independent Claim 14

Applicants respectfully submit that *Zurn* does not disclose *“a second MEMS resonator electrically coupled to the first MEMS resonator,”* as recited in independent claim 14. Applicants agree with the statement in the Office Action that the coupling of the two resonators in *Zurn* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as *“a second MEMS resonator electrically*

coupled to the first MEMS resonator,” as recited in independent claim 14. In that *Zurn* clearly does not show the explicit claim features, Applicants respectfully request that the rejection to independent claim 14 be withdrawn.

Because independent claim 14 is allowable over *Zurn*, dependent claims 15-16 are allowable as a matter of law.

VI. Claim Rejections - 35 U.S.C. § 102(e) (Thompson, USPN 6,535,766)

A. Statement of the Rejection

Claims 1, 2, 4, 8, 9, 11, 14-16 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by *Thompson et al.* (“*Thompson*,” U.S. Pat. No. 6,535,766). Applicants respectfully traverse this rejection.

B. Discussion of the Rejection

It is axiomatic that “[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(e).

In the present case, not every feature of the claimed invention is represented in the *Thompson* reference.

Independent Claim 1

Applicants respectfully submit that *Thompson* does not disclose “*electrically coupling the first MEMS resonator to the second MEMS resonator,*” as recited in

independent claim 1. The Office Action provides the following statement on pages 7 and 8 of the Office Action:

Thompson et al. shows a filter arrangement...comprising providing a first MEMS resonator (58, resonator 1) and a second MEM resonator (60, resonator 2) adjacent to the first MEMS resonator (Fig. 5a); and electrically coupling the first and second MEMS resonator (via spring coupler 56).

Applicants agree that the coupling of the two resonators in *Thompson* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as “*electrically coupling the first MEMS resonator to the second MEMS resonator*,” as recited in independent claim 1. In that *Thompson* clearly does not show electrically coupling resonators to one another, Applicants respectfully request that the rejection to independent claim 1 be withdrawn.

Because independent claim 1 is allowable over *Thompson*, dependent claims 2-7 and 17 are allowable as a matter of law.

Independent Claim 8

Applicants respectfully submit that *Thompson* does not disclose “*a second MEMS resonator electrically coupled to the first MEMS resonator*,” as recited in independent claim 8. Applicants agree with the statement in the Office Action that the coupling of the two resonators in *Thompson* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as “*a second MEMS resonator electrically coupled to the first MEMS resonator*,” as recited in independent claim 8. In that *Thompson* clearly does not show the explicit claim features, Applicants respectfully request that the rejection to independent claim 8 be withdrawn.

Because independent claim 8 is allowable over *Thompson*, dependent claims 9-13 and 18 are allowable as a matter of law.

Independent Claim 14

Applicants respectfully submit that *Thompson* does not disclose “***a second MEMS resonator electrically coupled to the first MEMS resonator,***” as recited in independent claim 14. Applicants agree with the statement in the Office Action that the coupling of the two resonators in *Thompson* is indeed a spring coupler, which is known in the art as mechanical coupling. Mechanical coupling is not the same as “***a second MEMS resonator electrically coupled to the first MEMS resonator,***” as recited in independent claim 14. In that *Thompson* clearly does not show the explicit claim features, Applicants respectfully request that the rejection to independent claim 14 be withdrawn.

Because independent claim 14 is allowable over *Thompson*, dependent claims 15-16 are allowable as a matter of law.

VII. Claim Rejections - 35 U.S.C. § 103(a)

A. Rejection of Claims 3 and 10

Claims 3 and 10 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Zurn* or *Thompson* in view of *Johnson* (“Johnson,” U.S. Pat. No. 3,858,127). Applicants respectfully traverse this rejection.

B. Discussion of the Rejection

As has been acknowledged by the Court of Appeals for the Federal Circuit, the U.S. Patent and Trademark Office (“USPTO”) has the burden under section 103 to establish a

prima facie case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. *See In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). It is respectfully asserted that no such *prima facie* case of obviousness has been made in the present outstanding Office Action.

Initially, it is respectfully noted that neither *Zurn* nor *Thompson* discloses the explicit claim features of independent claims 1, 8, and 14. *Johnson* does not remedy these deficiencies. In particular, *Johnson* discloses mechanical coupling among resonators, since it uses a mechanical element (coupling wires, see column 2). Since the dependent claims 3 and 10 contain all of the features of their respective base, and neither of the references cited disclose, teach, or suggest the independent claim features, Applicants respectfully submit that dependent claims 3 and 10 are allowable over the cited reference. Further, Applicants respectfully request that the rejections to claims 3 and 10 be withdrawn.

In summary, it is Applicants' position that a *prima facie* for obviousness has not been made against Applicants' claims. Therefore, it is respectfully submitted that each of these claims is patentable over *Zurn*, *Thompson*, and/or *Johnson*, and that the rejection of these claims should be withdrawn.

VIII. New Claims

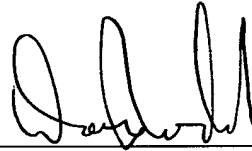
As identified above, claims 17 and 18 have been added into the application through this Response. Applicants respectfully submit that these new claims describe an invention novel and unobvious in view of the prior art of record and, therefore, respectfully requests

that these claims be held to be allowable. It is respectfully submitted that the addition of claims 17 and 18 do not add new matter.

CONCLUSION

Applicants respectfully submit that Applicants' pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



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Drawings

Applicants have enclosed a red-lined copy of FIG. 2A showing the amendment made to the figure, and have also enclosed a clean-copy replacement sheet that incorporates the change noted in the red-lined figure.

